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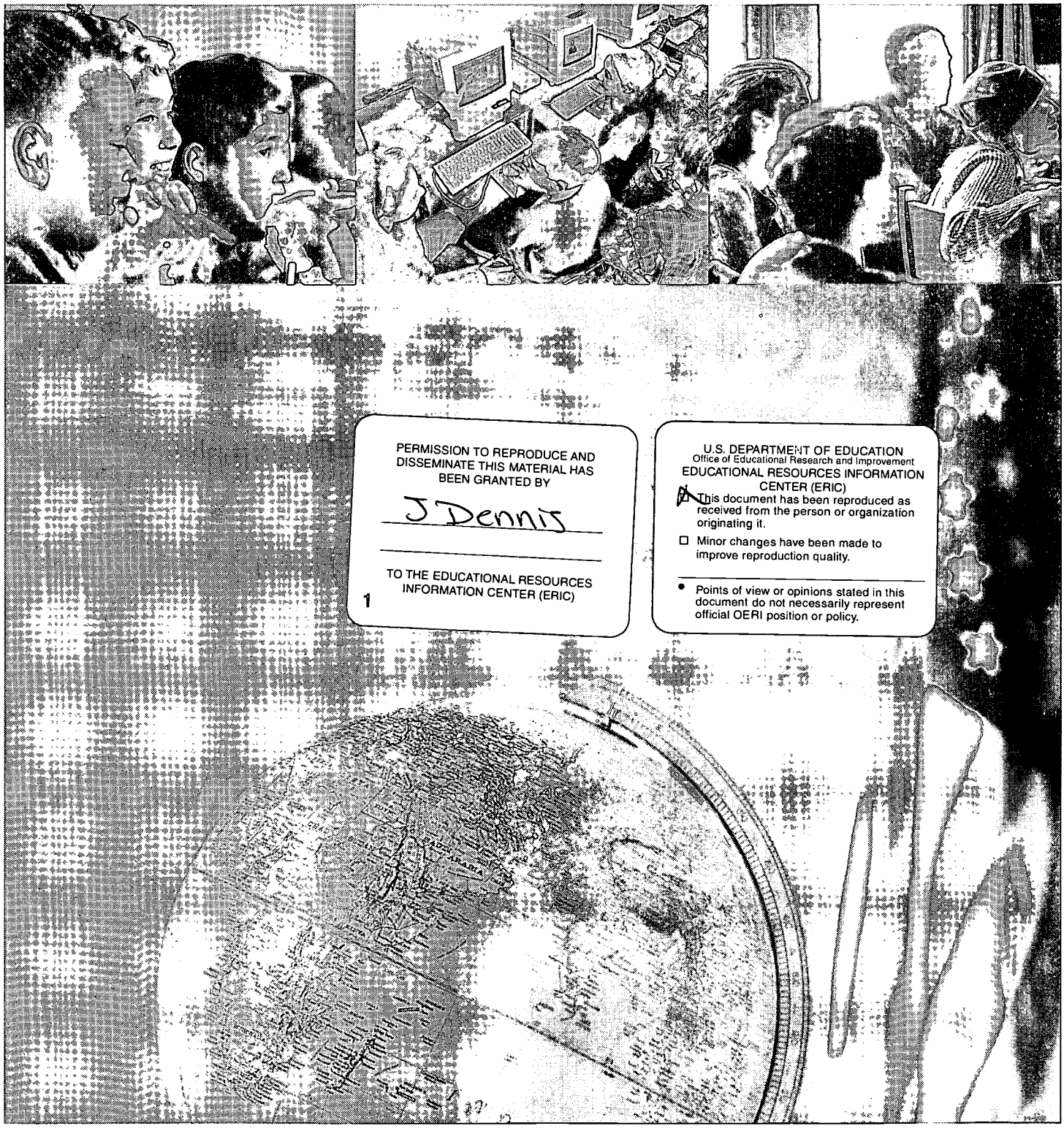
ABSTRACT

This report examines the effects of high school courses on students' readiness for college-level work. ACT Assessment scores for 1998 for graduates of Council of the Great City Schools member high schools are compared with those for 1997 graduates and with students nationally. All data are analyzed by course-taking patterns, school district wealth, student ethnicity, and gender. The report also examines the gap between urban students' readiness for college and their college expectations. Findings support the view that every urban student considering attending college should take a program of college preparatory courses, including 4 years of English, 3 or more years of mathematics, 3 or more years of social studies, and 3 or more years of science. The racial and ethnic composition of ACT urban test takers continues to be quite different from test takers nationally; three-fourths of urban test takers were children of color. Urban students increased their average ACT composite score between 1997 and 1998, although the national average remained unchanged. Of the 52 Great City Schools studied, only 15% (8 districts) had 1998 average ACT composite scores at or above the national average. These findings and other data from the study suggest the importance of taking courses that are rigorous enough to prepare a student for high school and preclude the need for remedial coursework after high school. Recommendations and promising practices are suggested to improve the academic achievement and college success rate of urban students. Appendixes define core courses, present standards for transition, and list numbers of ACT-tested graduates by Great City Schools district. (Contains 26 figures.) (SLD)

Gateways to Success

A Report on Urban Student Achievement and Course-Taking



By ACT and the Council of The Great City Schools

July 1999

Gateways to Success

A Report on Urban Student Achievement and Course-Taking

by ACT
and
The Council of the Great City Schools

July 1999

Acknowledgements

ACT and the Council of the Great City Schools thank the following individuals for their excellent work on this report—

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Staff from ACT conducted computer runs and statistical analyses of the assessment data. ACT also provided individual reports for each city. In addition, ACT provided critical assistance in writing the report and preparing the report for publication.

Staff from the Council of the Great City Schools took primary responsibility for analyzing findings and writing the report. In addition, the Council assisted ACT in the preparation of data runs, supplying suggestions for data layout and analysis. Finally, the Council was responsible for report layout and graphics.

This report, *Gateways to Success,* is unique in that it is based on the results of an achievement test administered simultaneously across multiple big city school districts. Other available assessments, such as the National Assessment of Education Progress, provide a sample for urban schools, but they do not provide accompanying data on student demographics, course-taking patterns, and other variables, as this report does. These analyses were published for the first time in *Charting the Right Course,* January 1998. When feasible, this edition compares June 1997 and June 1998 graduates.

Gateways to Success was produced with the strongest conceivable collaboration between ACT and the Council. Each organization would like to thank the other for its skilled work in producing this report.

Thank you.

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Foreword

A critical challenge facing American education today is the preparation of urban children for postsecondary education and the world of work. Urban schools are answering that challenge by raising standards, improving achievement, and promoting educational and career counseling. One strategy has been to improve students' course-taking patterns. Research has shown consistently that students who take academically-rigorous courses not only perform better on college admissions examinations but are more successful in college than those who have not taken those courses.

Gateways to Success, prepared by the Council of the Great City Schools and ACT, is the second in a series of reports that examines the effects of high school courses on students' readiness for college-level work. ACT Assessment scores for 1998 graduates of Council member high schools are compared with those for 1997 graduates and with students nationally. All data are analyzed by course-taking patterns, school district wealth, student ethnicity, and gender.

The Council and ACT report also examines the gap between urban students' readiness for college and their college expectations. One of the key findings, for instance, is that, although nearly half of ACT-tested college-bound urban students will likely succeed in an advanced college English composition course and intermediate college algebra, most of the others are not yet ready for standard college freshman courses and would benefit from additional preparation.

We are encouraged by the performance of urban students and continue to look for ways to prepare all students for life after high school--whether they plan to continue their education or to enter the workforce immediately. We hope our reports will help urban educators and policymakers make informed decisions about the college-preparatory courses offered in their districts.

Richard Ferguson
President
ACT, Inc.

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Executive Director
Council of the Great City Schools

Figures

Summary of Findings

Every urban student who is considering attending college should take a program of college preparatory courses in high school, including 4 years of English, 3 or more years of mathematics beginning with Algebra I, 3 or more years of social studies, and 3 or more years of science. Furthermore, it is not only important that students take the right number of courses, it is equally important for them to take courses that are rigorous enough to prepare them for college work and to preclude the need for remedial coursework after high school. Following are key findings from *Gateways to Success.*

1. The racial and ethnic composition of urban ACT test takers continues to be quite different from test takers nationally. Slightly less than three-fourths of all test takers nationally were white; while three-fourths of urban test takers were children of color.

2. Nearly half of urban ACT test takers expressed strong needs for assistance with their study skills, math skills, and with making educational and career plans.

3. Counselors need to communicate college expectations to all high school students considering postsecondary education. Counselors also should identify necessary coursework to prepare students for college-level work.

4. Sixty-eight percent of urban districts increased the number of ACT-tested graduates between 1997 and 1998.

5. Urban students increased their average ACT composite score from 18.7 in 1997 to 18.8 in 1998 while the national average remained unchanged.

6. Of the 52 Great City School districts studied, 15 percent (8 districts) had 1998 average ACT composite scores at or above the national average ACT composite score of 21.0.

7. Forty-four percent of urban school districts attained higher average ACT composite scores in 1998 compared with 1997.

8. Approximately equal percentages of urban students and students nationally indicated that they expect to complete a bachelor's degree, graduate study, or a professional degree.

9. The percentage of all urban ACT test takers who were white or Puerto Rican/Hispanic decreased while their average ACT Assessment scores increased between 1997 and 1998.

10. The percentage of all ACT urban test takers who were African American or Asian American remained the same while their average ACT Assessment scores increased between 1997 and 1998.

11. The percentage of all ACT urban test takers who were Mexican Americans/Chicano increased while their average ACT Assessment scores remained the same between 1997 and 1998.

Summary of Findings (continued)

12. Urban districts with student enrollments less than 50,000 and those with more than 200,000 had the greatest increases in average ACT composite scores between 1997 and 1998.

13. Urban students who take 5 courses of mathematics (Algebra 1, Algebra 2, Geometry, Trigonometry, and Calculus) earned higher ACT mathematics scores than students taking fewer mathematics courses, regardless of school district wealth.

14. Urban students who take fewer than 3 years of mathematics continue to score, on average, 7 points lower on the ACT Assessment Mathematics Test (on a 36-point scale) than students who take 5 years of mathematics.

15. Urban students who take Biology, Chemistry, and Physics courses continue to score higher on the ACT Science Reasoning Test than students who do not take these courses.

16. Urban students who take fewer than 3 years of science tend to score, on average, 3 points lower on the ACT Assessment Science Reasoning Test (on a 36-point scale) than students who take 3 or more years of science.

17. Approximately 33% of urban students who are considering going to college do not demonstrate the level of knowledge and skills that most colleges consider to be a prerequisite for placement in standard college-entry courses.

18. Approximately 25% of urban students earn English test scores on the ACT that are typically required by U.S. colleges for placement into standard English courses.

19. Approximately 20% of urban students earn English scores that are typically required by U.S. colleges for placement into an advanced English composition course or into an intermediate algebra course.

20. Approximately 10-13% of urban students obtain ACT scores that colleges typically require for placement into college algebra, biology, and chemistry courses.

21. Between 4-8% of urban students and 8-12% of students nationally earn ACT scores that demonstrate high levels of proficiency and are likely to be well-prepared to enter college calculus courses.

22. Nearly equivalent percentages of urban students and students nationally score in the highest ranges on the ACT score scale. These students, representing 5% or fewer of all ACT examinees nationally, are likely ready for almost any type of college-entry course in the most selective institutions in the U.S.

Gateways to Success

Introduction

In January 1998, the Council of the Great City Schools (CGCS) and ACT published the first-ever report on the impact of high school course-taking in urban public schools. This report showed that students who take a college-preparatory core program of high school courses including 4 years of English, 3 or more years of mathematics beginning with Algebra I, 3 or more years of social studies, and 3 or more years of science tend to earn higher scores on the ACT Assessment and are better prepared for success in college than those who do not take these courses. The 1998 report, *Charting the Right Course*, provided strong evidence that not only is it important that students take the right number of courses, it is equally important for them to take the right courses to prepare for college and work and to preclude the need for remedial work after high school. When urban high school students take rigorous courses, regardless of urban district wealth, the gaps in achievement between urban and non-urban students can be significantly reduced.

This report, *Gateways to Success*, conducted by the Council of the Great City Schools and ACT, expands on the first report by examining urban student performance on the ACT Assessment. Like its predecessor, this report will examine the effects of specific course patterns, school system size, student ethnicity and gender, and poverty levels on college admission test scores. The report will expand on these analyses by examining how well prepared urban students are to enter and succeed in college-entry courses compared to students nationally.

Data Collection and Analysis

ACT provided ACT Assessment results for the high school graduating classes of 1997 and 1998. ACT Assessment composite and content area scores were aggregated for students in Great City School districts according to the following variables:

academic preparation – core courses or more
academic preparation – course patterns
gender
ethnicity
concentration of poverty
school district size
Standards for Transition score ranges

Data were analyzed on all 52 member urban school districts and compared the results to national averages. Readers should note, however, that the proportion of students who took the ACT Assessment varied widely from city to city. In some districts, the SAT is the college admissions examination taken by the majority of graduating seniors. A list of the districts on which this analysis is based and the number of test takers per district is provided in Appendix C.

Figure 1
Number of Urban and National ACT-Tested Graduates

Number of Test Takers	1997	1998
Urban	54,789	56,458
National	942,42	997,069

Findings

Characteristics of Urban and National ACT-Tested Graduates

Of the 997,069 graduates in 1998 who took the ACT, 56,458, or 5.6%, attended a high school in one of the Great City School districts. The percentages of male and female test takers remained unchanged from 1997 to 1998, but the total number of urban test takers increased.

The racial and ethnic composition of urban ACT test takers continues to differ from test takers nationally. In 1998,71% of all test takers were white, while 75% of urban test takers were students of color. The percentage of urban test takers who identified themselves as Mexican American increased, while the percentages who identified themselves as Puerto Rican/Hispanic or white decreased. The percentages of African American and Asian American test takers remained unchanged for students in urban schools and nationally. In 1998, fewer than one-half of one percent of urban test takers identified themselves as Native American. (See Figures 1-4.)

- The percentage of urban ACT- tested graduates who were African American remained at 40% from 1997 and 1998; nationally the percentage remained at 10%.

- The percentage of urban ACT-tested graduates who were Puerto Rican/Hispanic decreased from 9% in 1997 to 6% in 1998; nationally the percentage decreased from 3% to 2%.

- The percentage of urban ACT-tested graduates who were Mexican American/Chicano increased from 7% in 1997 to 9% in 1998; nationally the percentage increased from 2% to 3%.

Figure 2
Urban and National ACT-Tested Graduates by Ethnicity, 1997 and 1998

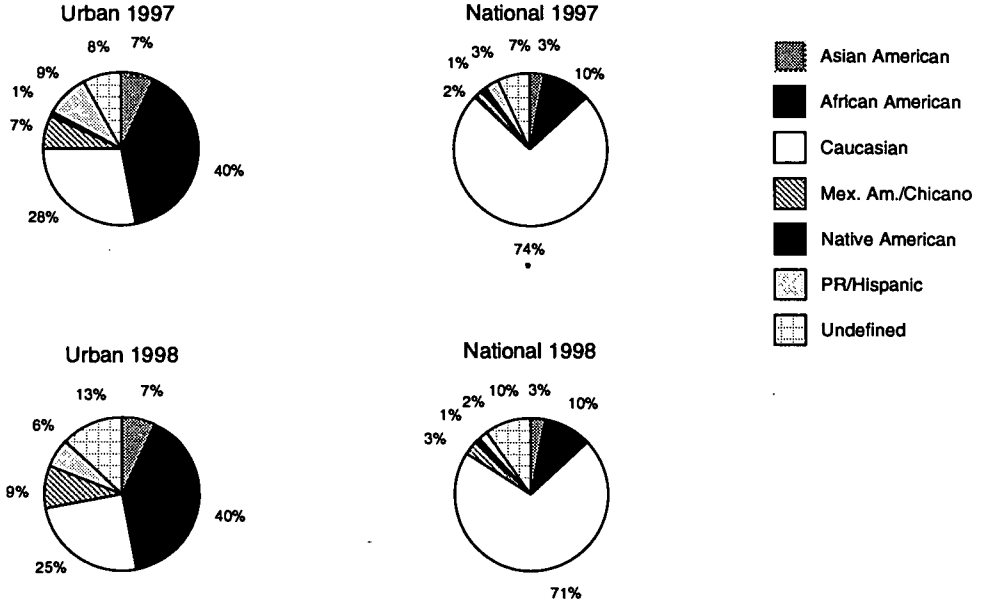


Figure 3
Urban and National ACT-Tested Graduates by Gender, 1998

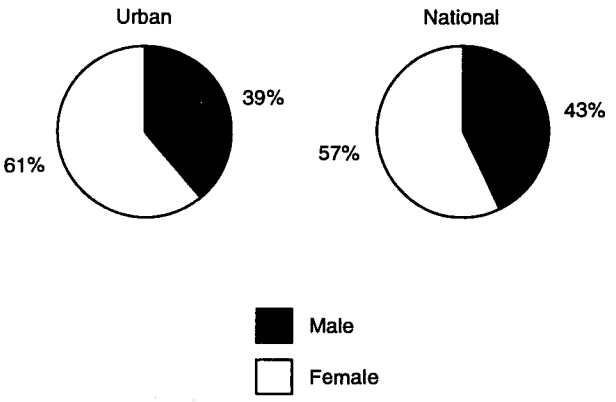
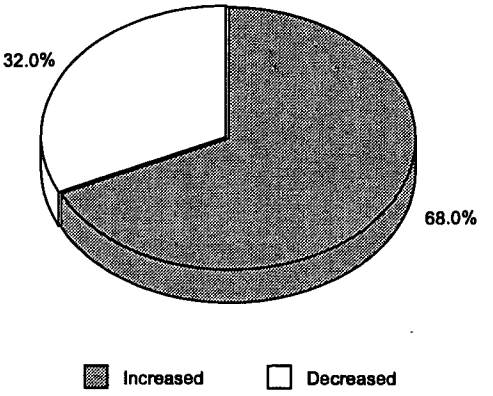


Figure 4
Percentage of Urban Districts by Change in Number of ACT-Tested Graduates, 1997 to 1998



N=41 school districts
Districts testing fewer than 100 students are not included.

- The percentage of urban ACT-tested graduates who were white decreased from 28% in 1997 to 25% in 1998; nationally the percentage decreased from 74% to 71%.

- Among urban ACT-tested students, 39% were male in 1998; nationally the percentage was 43%.

- The percentage of urban ACT-tested graduates who were female was 61% in 1998; nationally the percentage was 57%.

- Some 68% of urban districts increased their number of ACT-tested graduates between 1997 to 1998.

Urban and National ACT-Tested Graduates' Needs and Interests

The needs, interests, and goals of college-bound urban students were compared with those of their counterparts nationally. Students enrolled in CGCS districts expressed the same strong need for assistance in making postsecondary education decisions as students nationally. In addition, *significantly* more urban students indicated that they would like help with: 1) improving study skills, 2) improving mathematics skills, 3) improving reading speed and comprehension, 4) expressing their ideas in writing, and 5) personal concerns. These statistics mirror those for 1997. (See Figure 5.)

Figure 5
Urban and National Students' Needs, Interests and Goals, 1998

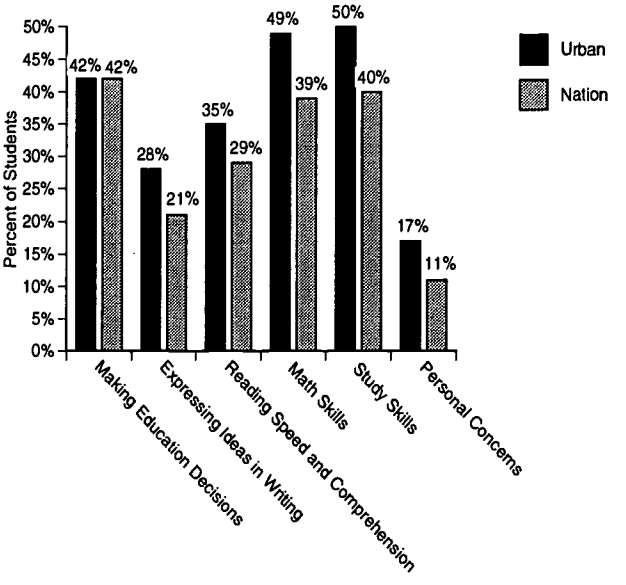


Figure 6
Urban Districts' High, Low, and Average ACT Scores by Content Area, 1997 and 1998

	Highest		Lowest		GCS Average		National Average	
	1997*	1998*	1997*	1998*	1997	1998	1997	1998
English	21.2	22.1	14.2	14.5	17.9	17.9	20.4	20.4
Math	22.4	23.0	16.2	15.7	18.8	18.8	20.6	20.8
Reading	22.9	23.2	15.6	16.5	18.8	18.9	21.4	21.4
Science Reasoning	22.1	22.6	16.2	16.0	18.8	18.8	21.2	21.1
Composite	22.2	22.7	15.7	15.9	18.7	18.8	21.0	21.0

* Districts with fewer than 100 ACT-tested graduates were not included in these calculations.

- Half (50%) of urban graduates expressed an interest in receiving assistance with their study skills in 1998, compared with 40% nationally.

- Some 49% of urban tested graduates expressed an interest in receiving assistance with their mathematics skills, compared with 39% nationally.

- About 42% of both urban and national graduates expressed an interest in receiving assistance when making education decisions.

Urban ACT Composite Scores

The Great City Schools have produced higher average ACT Assessment composite scores since 1997. About 44% of urban districts demonstrated higher average composite scores in 1998 than in 1997. Eight urban districts (15.0%) attained average composite scores at or above the national average – Des Moines, Omaha, Pittsburgh, Portland, Sacramento, Salt Lake City, Seattle, and Tucson. (See Figures 6-8.)

- Urban districts increased their average composite score from 18.7 in 1997 to 18.8 in 1998; nationally the average composite score remained unchanged at 21.0.

- The average reading score of urban districts increased from 18.8 in 1997 to 18.9 in 1998, while the national average remained the same.

- The average mathematics score of urban students remained at 18.8 in 1998; nationally average scores increased from 20.6 to 20.8.

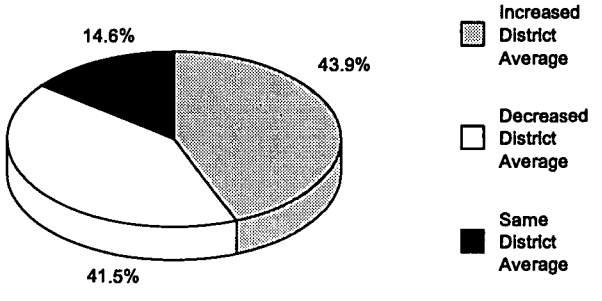
- Urban students from all ethnic backgrounds increased their average composite scores when compared to 1997, except Mexican American/Chicano students whose scores remained at 17.5.

- Based on their composite scores, African American students, Native American students, Asian American students, and Mexican American/Chicano students (because of decreased national averages for Mexican American/Chicano students) all continued to close the gap on their national counterparts.

Figure 7
Urban and National Average ACT Composite Scores by Ethnicity, 1997 and 1998

	Urban 1997	Urban 1998	National 1997	National 1998
African American	16.7	16.8	17.1	17.1
Native American	18.5	18.9	19.1	19.0
Asian American	19.7	20.1	21.8	21.8
Caucasian	21.7	21.9	21.7	21.7
Mexican American/Chicano	17.5	17.5	18.8	18.5
Puerto Rican/Hispanic	18.2	18.6	19.0	19.6
All Students	18.7	18.8	21.0	21.0

Figure 8
Urban Districts by Change in Average ACT Composite Scores, 1997 to 1998



N=41 school districts

- Urban white students improved their average ACT composite score from 21.7 in 1997 to 21.9 in 1998 and outperformed their national counterparts and all students nationally for the second year in a row.

- Compared to 1997, 44% of the Great City School districts increased their average ACT composite scores.

Urban and National Scores by Planned College Major

Urban students are eager to learn and achieve. This fact is demonstrated by the similarities between urban and national ACT-tested graduates in the percentage of specific planned college majors, as well as similarities in the highest levels of education that all ACT tested graduates expect to attain. While urban students are anxious to reach success, lower average scores show that students have not yet been given the opportunity to fulfill their goals. There appears to be a gap between planned college majors and projected job opportunities in the next ten years. Only a very small percentage of students, both in urban schools and nationally, identified computer and information science as their intended college major, even though this field is projected to have the best opportunities for employment in the next ten years. (See Figures 9 and 10.)

- Urban graduates intending to pursue a science major in college earned an average ACT composite score of 21.8; nationally those students averaged 23.5.

Figure 9
Urban and National Average ACT Composite Score by Planned Major, 1998

Planned Educational Major	GCS Percentage of Students	GCS Average Score	National Percentage of Students	National Average Score
Sciences	4%	21.8	5%	23.5
Education	6%	18.1	9%	20.3
Pre-Engineering	8%	19.7	7%	22.8
Business Management	12%	18.3	10%	20.6
Computer and Information Sciences	5%	18.1	3%	21.4

Figure 10
Urban and National Average ACT Composite Scores by Expected Level of Educational Attainment, 1998

Highest Level Of Education Students Expect to Complete	GCS Percentage of Students	GCS Average Score	National Percentage of Students	National Average Score
Vocational/Technical	1%	15.2	1%	17.1
Two-year college	4%	15.2	5%	17.4
Bachelor's degree	25%	17.7	32%	20.1
Graduate Study	19%	20.2	20%	22.4
Professional Degree	38%	19.7	30%	22.3

- Urban students intending to pursue an education major earned an average ACT composite score of 18.1; nationally those students averaged 20.3.

- Urban students intending to pursue a pre-engineering major earned an average ACT composite score of 19.7; nationally those students averaged 22.8.

- Urban students intending to pursue a business management major earned an average composite score of 18.3; nationally those students averaged 20.6.

- More ACT-tested graduates in urban schools than students nationally indicated that they intend to major in Business Management (12% vs. 10%), Pre-Engineering (8% vs. 7%), and Computer and Information Science (5% vs. 3%).

- Compared to students in urban schools, more graduates nationally indicated that they intend to major in Science (5% vs. 4%) and Education (9% vs. 6%).

- Approximately equal percentages of urban students and students nationally indicated that they expect to complete a vocational/technical, two-year college, or graduate study degree in college.

Figure 11
Urban Average ACT Composite Scores by District Enrollment, 1997 and 1998

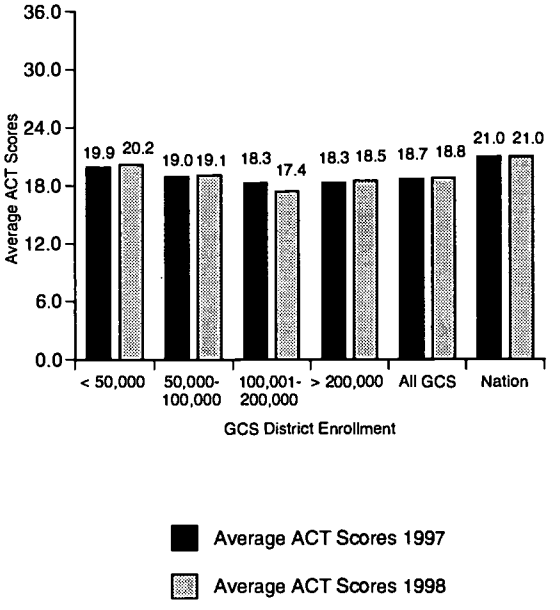
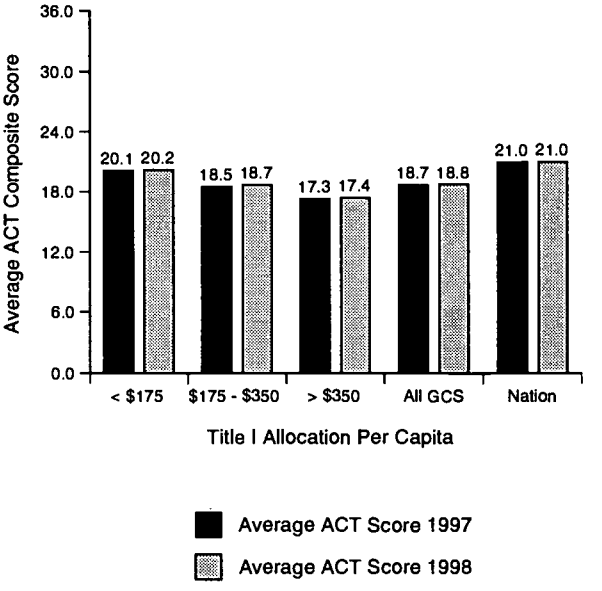


Figure 12
Urban Average ACT Composite Scores by Title I Per Capita Expenditure, 1997 and 1998



Urban Scores by District Size and Wealth

The Great City Schools continued to close the achievement gap with the nation by increasing their average ACT composite score. This increase in the average urban ACT composite score held up regardless of wealth[1]. In addition, urban districts with student enrollments of fewer than 50,000 and districts with more than 200,000 had the greatest increases in average ACT composite scores. (See Figures 11 and 12.)

- The average ACT composite score of Great City School districts with more than 200,000 students increased from 18.3 in 1997 to 18.5 in 1998.

- The average ACT composite score of Great City School districts with an enrollment between 50,000 and 100,000 increased from 19.0 in 1997 to 19.1 in 1998.

- Great City School districts with enrollments under 50,000 made the greatest gains, increasing their average composite score from 19.9 in 1997 to 20.2 in 1998.

- Great City School districts with Title I allocations of less than $175 per student (i.e., less poor) increased their average ACT composite score from 20.1 in 1997 to 20.2 in 1998.

- Great City School districts with Title I allocations between $175-$300 per student (i.e., somewhat poor) increased their average ACT composite score from 18.5 in 1997 to 18.7 in 1998.

- Great City School districts with Title I allocations of greater than $350 per student (i.e., poorest) increased their average ACT composite score from 17.3 in 1997 to 17.4 in 1998.

1 Title I allocation rates were determined by dividing each district's total Title I allocation in 1993-94 by student enrollment for that same year.

Relationship of Academic Preparation to Urban and National Scores by Ethnicity and Gender

Students in the Great City Schools show progress in all subject areas, with increases by students with both core and less than core academic preparation. (See Appendix A for definitions of core and less-than-core preparation.) The percentage of ACT-tested graduates with core academic preparation remained virtually the same in the Great City Schools (59%) and at the national level (61%) from 1997 to 1998.

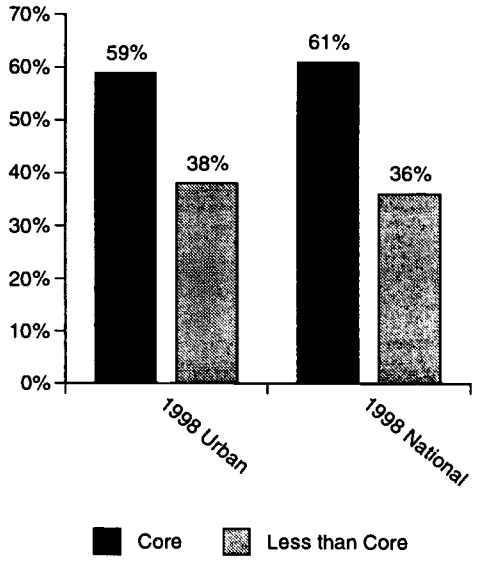
There was an increase in the average composite score for both urban males and females with less than core preparation. Urban male test-takers improved in all subject areas regardless of academic preparation between 1997 and 1998. Urban female test-takers improved their performance in English and Reading regardless of academic preparation.

Students of Native American, Asian American, and Puerto Rican/Hispanic background demonstrated test score increases in all subject areas regardless of academic preparation. African American students improved their average scores in Reading but decreased in average scores for Science Reasoning. Mexican American/Chicano students' test scores decreased in English, Mathematics, and Science Reasoning from 1997 to 1998. Urban white students increased their scores in English, Reading, and Math, remained the same in Science Reasoning, and outscored all students nationally in every content area for all students with both core and less than core academic preparation. (See Figures 13 through 16.)

- Average test scores of urban males with core and less than core academic preparation in Mathematics and Science Reasoning were higher than females in 1997 and 1998.

- Average test scores of urban females with core and less than core academic preparation in English and Reading were higher than males in 1997 and 1998.

Figure 13
Percentage of Urban and National ACT-Tested Graduates by Academic Preparation, 1998



* Totals may not sum to 100% due to nonresponse.

Figure 14
Urban Content Scores by Gender and Academic Preparation, 1997 and 1998

		Male		Female	
		1997	1998	1997	1998
		1997	1998	1997	1998
English	core	18.6	18.7	19.1	19.1
	< core	15.9	16.1	16.5	16.7
Math	core	20.6	20.7	19.3	19.2
	< core	17.6	17.9	16.9	17.0
	total	19.3	19.5	18.3	18.3
Reading	core	19.6	19.7	19.9	20.0
	< core	17.0	17.3	17.4	17.8
	total	18.5	18.7	18.9	19.1
Science Reasoning	core	20.2	20.3	19.2	19.1
	< core	17.9	18.2	17.4	17.4
	total	19.3	19.4	18.5	18.5
Composite	core	19.9	20.0	19.5	19.5
	< core	17.3	17.5	17.2	17.3
	total	18.8	18.9	18.6	18.6

Figure 15
Urban Content Scores by Ethnicity and Academic Preparation, 1997 and 1998

		English		Math		Reading		Science Reasoning	
		1997	1998	1997	1998	1997	1998	1997	1998
African American	Core	16.8	16.9	17.3	17.2	17.5	17.7	17.5	17.5
	Less than Core	14.9	14.9	15.6	15.6	15.8	16.1	16.2	16.2
	Total	16.0	16.0	16.6	16.6	16.7	17.0	17.0	16.9
Native American	Core	18.9	19.3	19.1	19.4	20.0	20.9	20.1	20.4
	Less than Core	15.3	16.0	16.7	16.7	17.2	18.3	17.5	18.1
	Total	17.4	17.8	18.1	18.2	18.9	19.7	19.0	19.4
Asian American	Core	18.9	19.2	22.5	22.8	19.6	19.8	20.2	20.6
	Less than Core	16.6	17.1	20.2	20.4	17.3	17.6	18.5	18.9
	Total	18.1	18.6	21.7	22.1	18.8	19.1	19.6	20.1
Caucasian	Core	22.0	22.1	22.2	22.4	23.2	23.1	22.4	22.4
	Less than Core	19.6	19.8	19.6	20.0	20.6	20.9	20.3	20.6
	Total	21.1	21.3	21.3	21.5	22.3	22.4	21.7	21.7
Mexican Am./Chicano	Core	17.5	17.4	19.3	19.1	18.4	18.5	18.7	18.6
	Less than Core	15.3	15.3	16.7	16.8	16.5	16.4	17.0	16.9
	Total	16.4	16.3	18.0	17.9	17.4	17.4	17.8	17.7
Puerto Rican/Hispanic	Core	18.4	18.9	20.0	20.3	19.5	20.2	19.4	19.6
	Less than Core	15.2	15.5	16.7	16.9	16.3	16.8	16.9	17.3
	Total	17.1	17.5	18.6	19.0	18.2	18.8	18.4	18.7
CGCS Average	Core	18.9	19.0	19.8	19.8	19.8	19.9	19.7	19.6
	Less than Core	16.4	16.4	17.2	17.3	17.4	17.6	17.6	17.7
	Total	17.9	17.9	18.8	18.8	18.8	18.9	18.8	18.8
National Average	Core	21.5	21.5	21.8	22.0	22.5	22.4	22.1	22.0
	Less than Core	18.6	18.6	18.7	18.9	19.7	19.7	19.7	19.6
	Total	20.4	20.4	20.6	20.8	21.4	21.4	21.2	21.1

Figure 16
Urban and National Composite Scores, 1997 and 1998

	Urban ACT Average 1997	Urban ACT Average 1998	National Average 1997	National Average 1998
Core	19.7	19.7	22.1	22.1
Below	17.3	17.4	19.3	19.3
All	18.7	18.8	21.0	21.0

- Average test scores of all urban students with less than core academic preparation increased in Mathematics, Reading and Science Reasoning from 1997 to 1998.

- Average test scores of all urban students with core academic preparation in English increased from 18.9 in 1997 to 19.0 in 1998.

- Average test scores of urban white, Asian American, Native Americans and Puerto Rican/Hispanic students with core and less than core academic preparation increased or remained the same in all content areas from 1997 to 1998.

- Test scores of urban African-American students with core academic preparation in Mathematics decreased from 17.3 in 1997 to 17.2 in 1998.

Relationship of Course Pattern to Urban Scores

Urban students with five courses in mathematics (Algebra 1, Algebra 2, Geometry, Trigonometry, and Calculus) earned higher ACT Mathematics Assessment scores than students taking fewer mathematics courses. Urban students taking Biology, Chemistry, and Physics continue to outperform students taking other science course sequences. Similar to 1997, students adding General Science to their Biology, Chemistry, and Physics course sequence attain lower scores than those who did not take General Science.

For both the ACT Mathematics and Science Reasoning Tests, the gap between poorer urban school districts and the national average is significantly reduced when urban students take tougher courses. However, the gap in ACT Assessment scores is substantially larger for students attending urban schools in districts that are very poor than for students in urban districts that are not quite as poor, no matter how many courses they enrolled in.

Urban students who enrolled in tougher courses outperformed students who did not take the harder courses, no matter what the poverty level of the city. Urban students in the most economically disadvantaged districts who enrolled in the tougher courses outperformed students in somewhat economically disadvantaged districts but who did not enroll in the tougher courses. (See Figures 17-20.)

- Average test scores of urban students taking at least five courses in mathematics (Algebra 1, Algebra 2, Geometry, Trigonometry, and Calculus) decreased from 22.7 in 1997 to 22.6 in 1998; nationally scores remained at 25.2.

- Average test scores of urban students taking Algebra 1, Algebra 2, and Geometry remained at 16.2; nationally scores remained at 17.8.

Figure 17
Urban and National Mathematics Scores by Course Pattern, 1997 and 1998

Courses	Urban Scores 1997	Urban Scores 1998	National Scores 1997	National Scores 1998
Alg 1, Alg 2, Geom, Trig, Calc	22.7	22.6	25.2	25.2
Alg 1, Alg 2, Geom	16.2	16.2	17.8	17.8
Less than 3 yrs.	15.5	15.7	16.2	16.4
Math (all students)	18.8	18.8	20.6	20.8

- Average test scores of urban students taking fewer than three years of mathematics increased from 15.5 in 1997 to 15.7 in 1998; nationally scores increased from 16.2 to 16.4.

- Average test scores of urban students taking General Science, Biology, Chemistry, and Physics increased from 19.9 in 1997 to 20.1 in 1998; nationally scores remained the same at 22.8.

- Average test scores of urban students taking Biology, Chemistry, and Physics decreased from 20.6 in 1997 to 20.5 in 1998; nationally scores decreased from 23.7 to 23.5.

- Average test scores of urban students taking General Science, Biology, and Chemistry remained at 17.8; nationally scores remained at 20.3.

- Average test scores of urban students taking fewer than three years of science remained at 17.0; nationally scores remained the same at 18.9.

- Average test scores of urban students in the most economically disadvantaged (greater than $350 per capita) districts and with at least five courses in mathematics (Algebra 1, Algebra 2, Geometry, Trigonometry, and Calculus) decreased from 20.1 in 1997 to 19.9 in 1998.

Figure 18
Urban and National Science Reasoning Scores by Course Pattern, 1997 and 1998

Courses	Urban Scores 1997	Urban Scores 1998	National Scores 1997	National Scores 1998
Gen Sci, Bio, Chem, Phys	19.9	20.1	22.8	22.8
Bio, Chem, Phys	20.6	20.5	23.7	23.5
Gen Sci, Bio, Chem	17.8	17.8	20.3	20.3
Less than 3 yrs.	17.0	17.0	18.9	18.9
Science (all students)	18.8	18.8	21.2	21.1

- Average test scores of urban students in the most economically disadvantaged (greater than $350 per capita) districts and with fewer than three years of mathematics remained at 15.6 in 1997 and in 1998.

- Average test scores of urban students in somewhat economically disadvantaged ($175 to $350 per capita) districts and with at least five years of mathematics (Algebra 1, Algebra 2, Geometry, Trigonometry, and Calculus) decreased from 22.8 in 1997 to 22.5 in 1998.

- Average test scores of urban students in somewhat economically disadvantaged ($175 to $350 per capita) districts and with fewer than three years of mathematics increased from 15.3 in 1997 to 15.5 in 1998.

- Average test scores of urban students in districts with lesser concentrations of poverty (less than $175 per capita) and with five years of mathematics (Algebra 1, Algebra 2, Geometry, Trigonometry, and Calculus) remained at 24.5 in 1997 and in 1998.

- Average test scores of urban students in districts with lesser concentrations of poverty (less than $175 per capita) and with fewer than three years of mathematics increased from 16.0 in 1997 to 16.4 in 1998.

- Average test scores of urban students in the most economically disadvantaged (greater than $350 per capita) districts and with three years (Biology, Chemistry, and Physics) of science decreased from 19.3 in 1997 to 19.2 in 1998.

- Average test scores of urban students in the most economically disadvantaged (greater than $350 per capita) districts and with fewer than three years of science remained at 16.3 in 1997 and 1998.

- Average test scores of urban students in somewhat economically disadvantaged ($175 to $350 per capita) districts and with three years of science (Biology, Chemistry, and Physics) decreased from 20.9 in 1997 to 20.6 in 1998.

Figure 19
Urban Mathematics Test Scores by Course Pattern and Title I Per Capita, 1997 and 1998

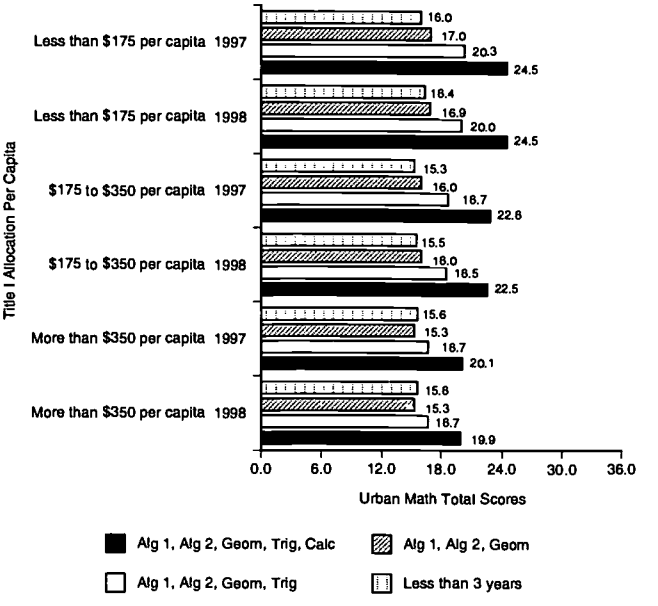
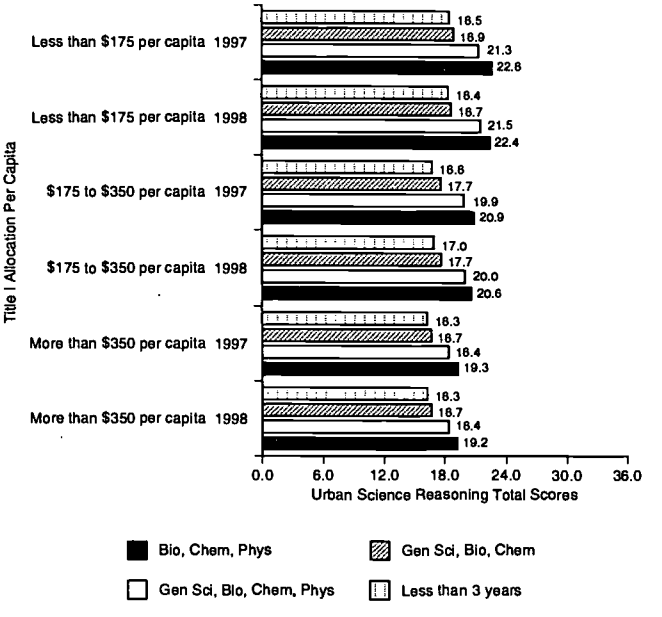


Figure 20
Urban Science Reasoning Test Scores by Course Pattern and Title I Per Capita, 1997 and 1998



- Average test scores of urban students in somewhat economically disadvantaged ($175 to $350 per capita) and with fewer than three years of science increased from 16.8 in 1997 to 17.0 in 1998.

- Average test scores of urban students in districts with lesser concentrations of poverty (less than $175 per capita) and with three years of science (Biology, Chemistry, and Physics) decreased from 22.6 in 1997 to 22.4 in 1998.

- Average scores of urban students in districts with lesser concentrations of poverty (less than $175 per capita) and with fewer than three years of science decreased from 18.5 in 1997 to 18.4 in 1998.

Translating Urban and National ACT Scores into College Expectations

It is clear from the course-taking data that students who take rigorous college preparatory courses in high school score higher on the ACT Assessment than students who do not. This is true regardless of student ethnicity or gender as well as district poverty. But what do these scores really mean? Are urban students who take these rigorous courses ready to meet college expectations?

To examine this question, the performance of urban students and students nationally was examined and interpreted using the Standards for Transition developed by ACT. Since the ACT Assessment is a curriculum-based test designed to measure knowledges and skills taught in high school that are important for success in college, the Standards are a direct outgrowth of college expectations. The Standards reflect the progression of increasingly sophisticated skills from the lower to the upper score ranges of scores. Standards are provided in five ACT score ranges (16-19, 20-23, 24-27, 28-32, 33-36). See Appendix B.

Students who score in the 1-15 range are obtaining scores lower than those typically used by colleges for placement into entry-level courses. At least one-quarter of urban student ACT-tested graduates who are considering college are not likely ready for college-level coursework. These students would likely benefit from additional college preparatory coursework to acquire the knowledge and skills described in high score ranges.

Students who score in the 16-19 range are obtaining English test scores that are typically required by U.S. colleges for placement into standard English courses. A small percentage of students who score in the 16-19 range in math would be ready for a typical elementary algebra course offered to college freshmen.

Students who score in the 20-23 range are most likely prepared to enter an advanced composition course in English and a standard entry-level college intermediate algebra course. A few students who obtain mathematics scores in this range are likely ready to enter a typical college algebra course or higher.

Students who score in the 24-27 range are likely ready to enter college courses in biology, chemistry, and college algebra.

Students who score in the 28-32 range are demonstrating high levels of achievement and are likely prepared to take a college calculus course.

Students who score in the 33-36 range are well prepared for college-level work in the most selective institutions in the U.S. Roughly equal percentages (less than 5%) of urban and national ACT Assessment examinees score in this range.

Collectively these analyses suggest that the overall pattern of performance for CGCS students is similar to the pattern of students nationally, except for the fact that there are more CGCS students scoring in the lower score ranges and slightly fewer in the upper score ranges.

About one-third of CGCS students who have taken the ACT are not likely to be ready for college-level work, one-fourth are prepared to enter institutions with open or liberal admissions policies, one-fifth are prepared to enter institutions with tradi-

tional admissions policies, and one-fourth of CGCS students are ready to enter institutions with selective or highly selective admissions policies.

The Standards for Transitions provide additional information about what students are likely to know and be able to do. This information can be used to guide students, especially those in the lower score ranges, into additional coursework and instruction that can help them raise their readiness to levels appropriate for placement into college-level courses.

The fact that CGCS students score in the highest score ranges in nearly the same percentages as students nationally suggests that some CGCS students are reaching the highest proficiency levels through rigorous and demanding high school courses. Although there is much left to do to raise the proficiency for all students, the Standards for Transition may be helpful to bridge the gap that has existed for so many years between what high schools are teaching and what colleges expect of their entering students. (See Figures 21-26.)

- Approximately 24-36% of the urban students scored in the lowest ACT range (1-15) compared to 10-19% of students nationally.

- Approximately equal percentages (22-36%) of urban students and students nationally scored in the 16-19 range in English, mathematics, and reading.

- Approximately one-fifth of urban students scored in the 20-23 range, which is about 5-8% fewer than students nationally.

- Approximately 10-13% of urban students obtained scores in the 24-27 range, which was about 7-9% fewer than students nationally.

- Approximately 4-8% of urban students obtain scores in the upper score range of 28-32, compared to 8-12% of students nationally.

- Approximately equal percentages (5% or fewer) of urban students and students nationally scored in highest range (33-36).

Figure 21
Percentage of Urban and National Students with Scores in 1-15 Range, 1998

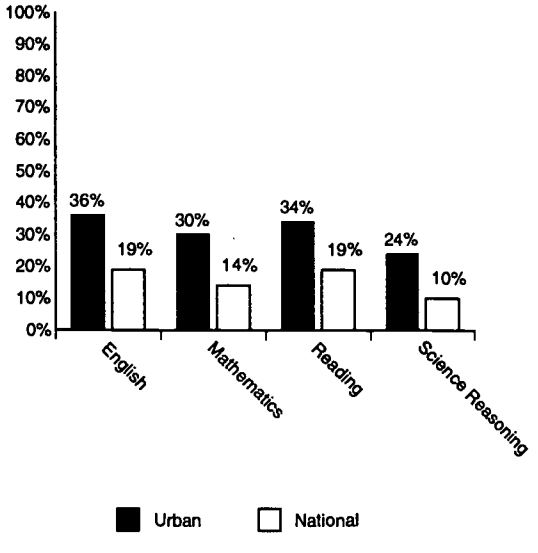


Figure 22
Percentage of Urban and National Students with Scores in 16-19 Range, 1998

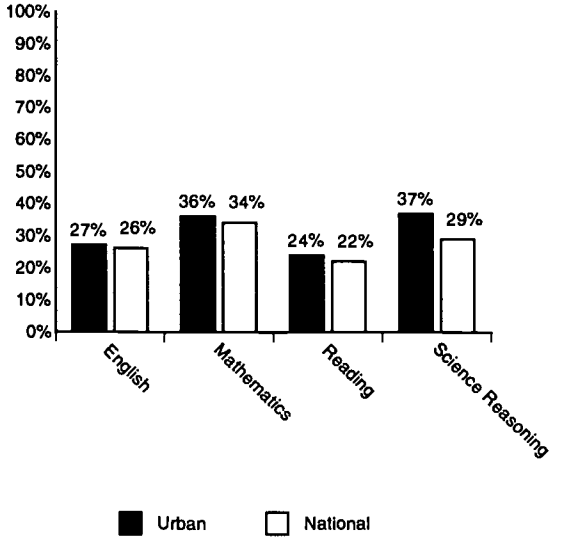


Figure 23
Percentage of Urban and National Students with Scores in 20-23 Range, 1998

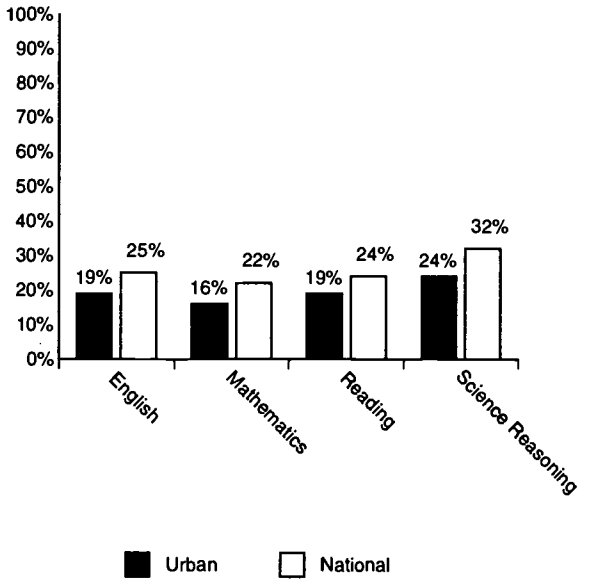


Figure 24
Percentage of Urban and National Students with Scores in 24-27 Range, 1998

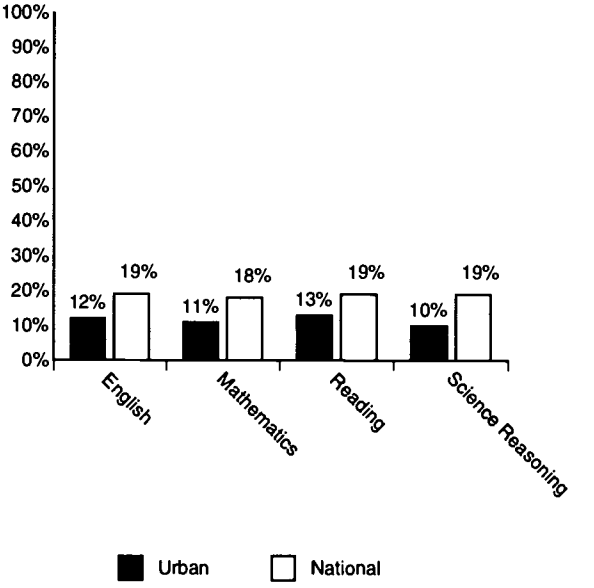


Figure 25
Percentage of Urban and National Students with Scores in 28-32 Range, 1998

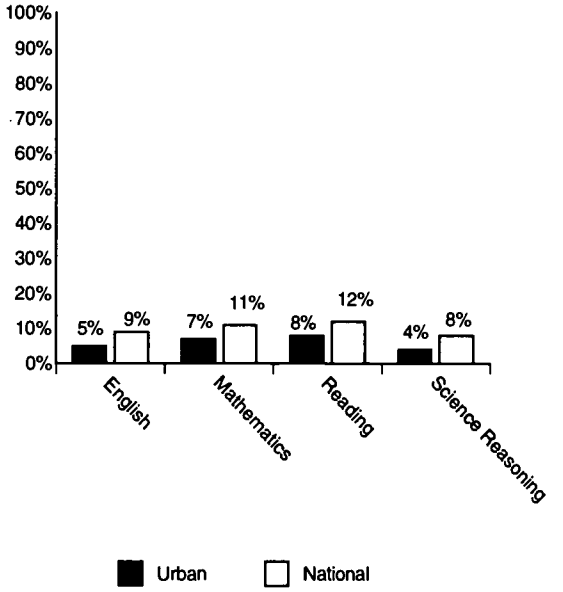
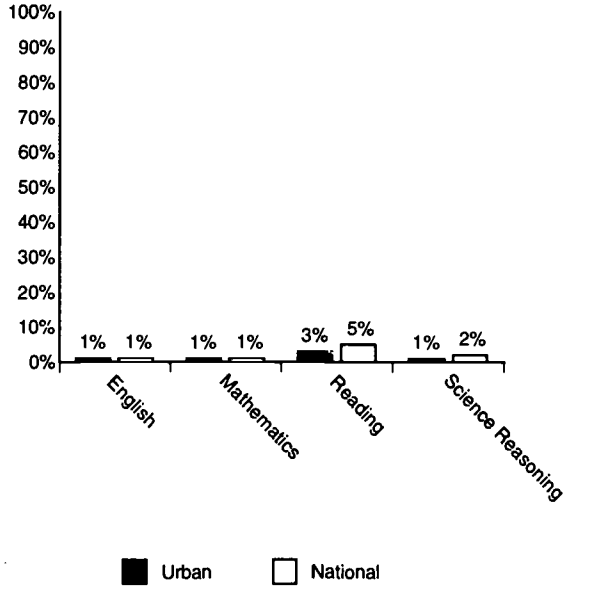


Figure 26
Percentage of Urban and National Students with Scores in 33-36 Range, 1998



Conclusion

Gateways to Success duplicates the findings of the 1998 report in many ways. Data continue to show that urban school students can substantially improve their readiness for college by taking a tougher sequence of core academic courses in high school. In fact, this report shows once again, that urban students taking a more rigorous sequence of courses in mathematics and science scored at or above national averages on the ACT Assessment.

When compared with last year's findings, urban students' ACT composite scores increased by one-tenth of a point to 18.8. Since the national average ACT composite score remained the same, this year's results demonstrate a potential trend in closing the achievement gap between urban students and students throughout the nation. Additional data for subsequent years will need to be collected to determine the merit of this initial finding. This average ACT composite score gain is particularly important since the number of urban test takers increased. The challenge that remains is to increase the number of urban test takers while simultaneously increasing ACT Assessment scores.

ACT Assessment data also continue to demonstrate that achievement gaps exist among students by race and ethnicity, with scores for urban students ranging as low as 16.8 for African Americans and as high as 21.9 for white students. White students who attend the nation's urban schools outperformed not only their urban counterparts, but also all other students throughout the nation. The outstanding performance of certain students shows that the Great City Schools have the capacity to provide a high-quality education, and we must persevere in our efforts to provide this opportunity to all children.

The Council of the Great City Schools and its member districts have launched a national task force aimed at substantially reducing or eliminating gaps in the academic achievement of students by race and ethnicity. The Task Force on Closing the Achievement Gaps, composed of urban school superintendents, board members, research directors, and other administrators, as well as deans from colleges of education, has been established to assist urban public school systems around the nation in narrowing or closing identifiable gaps in achievement and boosting academic standards.

The Task Force will identify policies and practices in urban schools to close the achievement gaps, conduct focus groups and forums, examine five to seven big-city school districts that have made demonstrable progress in closing gaps, and collect and review research on reasons for achievement gaps.

Endeavors like the Task Force, and others at the district level, are necessary to continue the successful trends demonstrated by urban students. The improved performances across all groups, whether by race or ethnicity, gender, academic preparation, or course sequence, demonstrate that all urban students have the skills and desire to achieve. Understanding and then eliminating the achievement gaps of students in different racial and ethnic groups has become a priority of urban educators.

Recommendations and Promising Practices

These *Recommendations and Promising Practices* were reported by high achieving Great City School districts in the January 1998 edition of *Charting the Right Course.* These districts have demonstrated the most success in preparing their college-bound students for postsecondary education, and their advice and resources remain invaluable to the urban school community. These CGCS districts have average ACT composite scores that are at or above the national average, and their recommendations are intended to offer improvement strategies for other Great City School Districts.

1. Encourage all students to take more than the core coursework. Students who take at least a core college preparatory course sequence are likely to perform better on college admissions and placement examinations.

2. Encourage students to attend school daily and go to every class. Students with good attendance attain maximum benefits from their education.

3. Encourage students to take Algebra I in junior high/middle school, so they are ready for higher levels of mathematics in high school. Students who attained the highest achievement levels were those who had taken five years of mathematics. Students who do not take Algebra I in junior high/middle school should take one mathematics course for three of their high school years and two mathematics courses one year.

4. Encourage school administrators to seek additional funding from external agencies and/or foundations to increase the number of students from underrepresented groups who enroll in and succeed in mathematics and science courses. Students of color continue to attain lower achievement levels than their counterparts. Special efforts should be made to ensure that these students have the same opportunity to learn as other students.

5. Establish a close working relationship between the high school and nearby postsecondary institutions. Students who are involved in internship programs, shadowing experiences, and other relevant experiences are better prepared to enter postsecondary education.

6. Promote strong family involvement in their children's education. Research shows a positive correlation between parent involvement and student achievement. If structured correctly, positive adult role models can often supplement or substitute for family involvement.

7. Hire and support committed, hard-working, and dedicated staff. Next to the parent, the teacher is the most important factor in the education of today's youth.

8. Offer test preparation classes before, during, and/or after school. Effective test preparation courses can be helpful, although nothing can substitute for a student taking the correct course sequence.

9. Ensure that each school has a plan for improving its academic performance. All students benefit when a school has a clear mission.

Recommendations and Promising Practices (continued)

10. Prepare an individual education plan with academic goals for each student upon entrance to high school.

11. Encourage students to participate in rigorous course offerings, such as advanced courses and/or International Baccalaureate courses in their junior and senior years in high school.

12. Encourage all students to take college entrance exams as early as possible. Dates for admission and placement exams should be well publicized in high schools. Students who take college entrance examinations early have the opportunity to seek assistance in subject areas of greatest need.

13. Seek funding to pay for students to take college entrance exams, so that all students, regardless of family income, have an equal opportunity to take the examination. Both the ACT Assessment and the SAT offer waivers for students who need financial support.

14. Ensure that the content of mathematics and science courses is rigorous and embodies high standards for all students. As more students take higher level courses, the content should remain rigorous.

15. Provide professional development opportunities for teachers to ensure that they use a variety of instructional methods designed to reach all students. Not all students learn in the same manner, so staff need a wide repertoire of instructional strategies.

Appendix A

Definition of "Core" and "Less than Core" Academic Preparation

Definition of "Core" and "Less than Core" Academic Preparation

Adequate high school course preparation, or "core" academic preparation, is defined as the courses in each content area that many college admissions officers use to determine proper academic preparation for an incoming college freshman. Those courses include:

- English (four years or more):
One year credit each for English 9, English 10, English 11, and English 12.

- Mathematics (three years or more):
One year credit each for Algebra 1, Algebra 2, and Geometry. One-half year credit each for Trigonometry, Calculus (not Pre-Calculus), other mathematics courses beyond Algebra 2, and Computer Mathematics/ Computer Science.

- Social Studies (three years or more):
One year credit each for American History, World History, and American Government; one-half year credit each for Economics, Geography, Psychology, and other history (European, State, etc.).

- Science Reasoning (three years or more):
One year credit each for General/Physical/Earth Science, Biology, Chemistry, and Physics.

A "less than core" academic program is defined as any high school program consisting of fewer courses than those included in the core curriculum listed above.

Appendix B

Standards for Transition

Standards for Transition

The Standards for Transition, developed by ACT, Inc. describe what students who score in various score ranges are likely to know and to be able to do. They reflect the progression and complexity of skills in the individual ACT Assessment tests. Since the standards are cumulative, students can typically demonstrate most or all of the skills and knowledge in the score ranges preceding the range in which they scored.

English

Score Range 1-15 Students who score between 1-15 are most likely beginning to develop the skills and knowledge assessed in the 16-19 score range. Scores in the 16-19 range represent a level of performance considered by most colleges to be a minimum to enter credit-bearing courses.

Score Range 16-19 Students can identify the basic purpose or role of a specified phrase or sentence. They are able to select the most logical place to add a sentence in a paragraph and delete illogical conjunctive adverbs and irrelevant, redundant, and wordy material. They revise expressions that violate the essay's tone and correct glaringly inappropriate shifts in verb tense or voice. Students are able to use punctuation or conjunctions to coordinate uncomplicated sentences and to avoid awkward-sounding fused sentences or sentence fragments. They solve such basic grammatical problems as whether to use an adverb or an adjective form; they know how to form comparative and superlative adjectives, how to ensure straightforward subject-verb and pronoun-antecedent agreement, and when to use the contraction it's. The can provide appropriate punctuation in straightforward situations (E.g. terms in a series) and can delete commas that disturb the sentence flow.

Score Range 20-23 Students can identify the main theme or topic of a straightforward piece of writing. They are able to add a sentence that introduces a simple paragraph and to decide to the most logical place to add a sentence in an essay. They can use a conjunctive adverb or phrase to express a straightforward logical relationship. The can eliminate details that clearly violate the focus of the essay and revise material to make the writing less clumsy and more concise. They can use the word or phrase most appropriate in terms of the context and tone of a fairly straightforward essay. Students are able to recognize and to correct marked disturbances of sentence flow and structure (such as misplaced modifiers) and to determine the clearest and most logical conjunction to link clauses. They identify the past and present participle forms of irregular but commonly used verbs and identify idiomatically appropriate prepositions in terms of their context. They can assure that a verb agrees with its subject where there is some text between the two, use commas to set off basic parenthetical phrases, and delete unnecessary commas when an incomplete or incorrect reading of the sentence suggests a pause that should be punctuated.

Score Range 24-27 Students can identify the focus of a simple essay, applying that knowledge to each paragraph's function and determining if an essay has met a specified goal. They are able to add a sentence to introduce or summarize the essay, accomplish a fairly straightforward and limited purpose, and provide a transition between paragraphs when the essay is fairly straightforward. They can delete a sentence that disturbs the development of the paragraph and a phrase that disrupts the flow of the sentence. They can use conjunctive adverbs or phrases to create subtle logical connections between sentences and can rearrange the sentences in a fairly uncomplicated paragraph. They can identify and correct pronouns that have vague referents and sophisticated-sounding language that is inconsistent with the style and tone of the essay. Students are able to revise to avoid faulty placement of phrases and coordination and subordination of clauses in sentences with subtle structural problems. They can maintain consistent verb tense and pronoun person in compound sentences or between sentences. They form present-perfect verbs by using have rather than of. They ensure that a pronoun agrees with its antecedent when the two occur in separate clauses or sentences. They use punctuation to set off complex parenthetical or adverbial phrases and delete unnecessary commas while recognizing inappropriate uses of colons and semicolons. They know how to use apostrophes to indicate simple possessive nouns.

Score Range 28-32 Students can identify the focus and purpose of a fairly involved essay, applying that knowledge to determine the rhetorical effect of a new or existing sentence, and the need to add supporting detail or delete plausible but irrelevant material. They are able to add a sentence to introduce or conclude a fairly complex paragraph, accomplish a subtle purpose such as emphasis, and express meaning through connotation. They can rearrange sentences in a complex paragraph; make sophisticated distinctions concerning the logical use of conjunctive adverbs or phrases; and correct vague, wordy, or clumsy writing containing sophisticated language. They correct redundant material that exists in separate clauses or sentences. They use sentence-combining techniques, effectively avoiding problematic comma splices, run-on sentences, and sentence fragments, especially in sentences containing compound subjects or verbs. They maintain a consistent and logical use of verb tense and pronoun person; they avoid the pitfalls of hypercorrection, correctly using reflexive pronouns, the possessive pronouns its and your, and the relative pronoun who rather than whom. They ensure that a verb agrees with its subject in complex situations, and they can deal with multiple punctuation problems (e.g., compound sentences containing unnecessary commas and phrases that may or may not be parenthetical). They know how to use commas to set off a nonessential/ nonrestrictive appositive or clause, a semicolon to indicate a relationship between closely related independent clauses, and an apostrophe to show possession, especially with irregular plural nouns.

Score Range 33-36 Students can determine whether a complex essay has accomplished a specific purpose. They consider the need for introductory sentences or transitions, basing their decisions on a complete understanding of both the logic and rhetorical effect of the paragraph and essay. They can add a phrase or sentence to accomplish a complex purpose, often expressed in terms of the main focus of the essay. They delete redundant material that involves subtle concepts or that is redundant in terms of the paragraph as a whole. These students work comfortably with long sentences and complex clausal relationships within sentences, avoiding weak conjunctions between independent clauses and maintaining parallel structure between clauses. They can ensure that a verb agrees with its subject when a phrase or clause between the two suggests a different number for the verb. They can provide idiomatically and contextually appropriate prepositions following verbs in situations involving sophisticated language or ideas. They know how to use a colon to introduce an example or an elaboration.

Mathematics

Score Range 1-15 Students who score between 1-15 are most likely beginning to develop the skills and knowledge assessed in the 16-19 score range. Scores in the 16-19 range represent a level of performance considered by most colleges to be a minimum to enter credit-bearing courses.

Score Range 16-19 Students can solve routine one-step and two-step arithmetic problems, single-step percent problems, and straightforward average problems; recognize one-digit factors of a number; and identify a digit's place value. In probability, statistics, and data analysis, these students can perform computations on data from tables and graphs and determine the probability of the complement of an event. In algebra, they can combine two like terms (e.g., $2x + 5x$); substitute whole numbers for unknown quantities to evaluate expressions; and solve one-step equations having whole number or decimal answers. In coordinate geometry, they can locate points on the number line and in the first quadrant of the coordinate plane. In geometry, they can compute the perimeter of polygons when all side lengths are given and compute the area of rectangles when whole number dimensions are given.

Score Range 20-23 Students can solve routine two-step and three-step arithmetic problems, such as rate and proportion problems, multistep percent problems (e.g., tax added and percentage off), and average problems (e.g., computing with negative integers or using a given average); and exhibit knowledge of elementary number concepts including the ordering of decimals, pattern identification, absolute value, primes, and greatest common factor. In probability, statistics, and data analysis, these students can translate from one representation of data to another (e.g., a bar graph to a circle graph); can determine the probability of a simple event; and exhibit knowledge of simple counting techniques. In algebra, they can manipulate basic algebraic expressions (e.g., substitute integers for unknown quantities, add and subtract simple algebraic expressions, multiply two binomials, and perform straightforward word-to-symbol translations); and solve most first-degree equations. In coordinate geometry, they comprehend the concept of length on the number line; can locate points in the coordinate plane; exhibit knowledge of vertical and horizontal lines and of their point of intersection; and exhibit knowledge of slope. In geometry, they exhibit knowledge of basic angle properties and special sums of angle measures (e.g., 180° and 360°); can compute the area and perimeter of triangles and rectangles when the problems are simple; and can use geometric formulas when all necessary information is given.

Score Range 24-27 Students can solve multistep arithmetic problems that involve planning or converting units of measure (e.g., feet per second to miles per hour) and work problems involving positive integer exponents, ordering fractions, and numerical factors. In probability, statistics, and data analysis, these students can manipulate data; use Venn diagrams in counting; and compute straightforward probabilities for common situations. In algebra, they can work with square and cube roots; determine when an expression is undefined; square numbers and expressions; factor simple quadratics (e.g., the difference of squares and perfect square trinomials); identify zeros or roots of simple quadratic equations; add, subtract, and multiply polynomials; write expressions or equations with a single variable for common pre-algebra settings (e.g., rate and distance problems and problems that can be solved by using proportions); solve real-world problems using first-degree equations; and solve first-degree inequalities that do not require reversing the inequality sign. In coordinate geometry, they can identify the graph of a linear inequality and find the midpoint of a line segment on the number line; and in the coordinate plane, they can determine the slope of a line from points or equations; match linear graphs with their equations; and find the midpoint of a line segment. In geometry, they can use properties of isosceles triangles; recognize Pythagorean triples; use several angle properties to find an unknown angle measure; compute areas and circumferences of circles after identifying necessary information; compute areas of rectangles and triangles when an additional step is required; and compute the perimeter of simple composite geometric figures with unknown side lengths. Additionally, students (ACT Assessment only) can identify a particular trigonometric ratio when all necessary side lengths of a right triangle are given, as well as exhibit knowledge of the complex number i.

Score Range 28-32 Students can solve word problems containing several rates, proportions, or percentages. In probability, statistics, and data analysis, students can interpret and use information from tables and graphs including graphs in the coordinate plane; apply counting techniques; and apply the definition of probability. In algebra, they can apply the rules of exponents and number properties—often in a new context—to solve problems that involve even/odd numbers, positive/negative integers, and prime factorizations; manipulate equations; write expressions for common algebra settings; solve absolute value equations; solve linear inequalities that require reversing the inequality sign; and find solutions to systems of linear equations. In coordinate geometry, they can graph the solution set of linear inequalities on the number line; and in the coordinate plane, they can use the distance formula and use properties of parallel and perpendicular lines to determine an equation of a line or coordinates of a point. In geometry, they can apply properties of 30°-60°-90°, 45°-45°-90°, similar, and congruent triangles; use the Pythagorean theorem; and use relationships involving area, perimeter, and volume of geometric figures to compute another measure. Additionally, students (ACT Assessment only) can recognize special characteristics of parabolas and circles from their equations (e.g., the vertex of a parabola and the center or radius of a circle) and can apply basic trigonometric ratios to solve right-triangle problems.

Score Range 33-36 Students can solve complex arithmetic problems involving percent of increase or decrease and problems requiring integration of several concepts from pre-algebra and/or pre-geometry (e.g., comparing percentages or averages, using several ratios, and finding ratios in geometry settings). In probability, statistics, and data analysis, students can analyze and draw conclusions based on information from tables and graphs including graphs in the coordinate plane and exhibit knowledge of conditional and joint probability. In algebra, they can draw conclusions based on number concepts, algebraic properties, and/or relationships between expressions and numbers; exhibit knowledge of logarithms and geometric sequences; can write an expression or equation that requires planning, solving, and/or manipulating to accurately model a situation; and can solve simple absolute value inequalities. In coordinate geometry, they can graph solutions to simple quadratic inequalities on the number line and identify characteristics of graphs in the coordinate plane based on a general equation such as y = ax2 + c or on a set of conditions. In geometry, they can draw conclusions based on a set of conditions; solve multistep geometry problems that involve integrating concepts, planning, visualization, and/or making connections with other content areas (e.g., illustrating a scenario and then determining a solution path, and using algebraic representations for area); use scale factors to determine the magnitude of a size change; and compute the area of irregularly shaped regions that require planning or visualization. In trigonometry, they can use trigonometric concepts and basic identities to solve problems; exhibit knowledge of unit circle trigonometry; and can recognize graphs of basic trigonometric functions.

Reading

Score Range 1-15 Students who score between 1-15 are most likely beginning to develop the skills and knowledge assessed in the 16-19 score range. Scores in the 16-19 range represent a level of performance considered by most colleges to be a minimum to enter credit-bearing courses.

Score Range 16-19 Students can exhibit a basic understanding of uncomplicated literary narratives. They are able to draw simple conclusions and make simple generalizations about the main points and characters; they are able to identify relationships between principal characters and to identify details that are important to a story. In uncomplicated informational passages, they are able to locate simple details at the sentence and paragraph level. These students are beginning to develop the reasoning skills that will enable them to answer more complex questions and comprehend more challenging passages.

Score Range 20-23 Students can grasp the important components of uncomplicated literary narratives and informational passages. They respond with increasing confidence to factual questions in informational passages. They can identify comparative relationships between ideas and characters, and can identify clearly stated cause-effect relationships found in uncomplicated texts. They are able to order simple sequences of events in uncomplicated literary narratives. They also draw simple conclusions using details that support the main idea of more challenging passages. They locate important details and are beginning to use context clues to define words in uncomplicated passages. These students demonstrate some reasoning skills, evident in their ability to make simple generalizations about characters and about the author's attitude toward his or her subject in uncomplicated passages.

Score Range 24-27 Students can exhibit a sound understanding of the important features of more challenging literary narratives and informational passages. They can infer the main idea of some paragraphs in more challenging passages, and they can discern which details, though they may appear in different sections throughout a passage, support important points in more challenging passages. They have a sound grasp of relationships between characters and ideas and can identify subtly stated cause-effect relationships in uncomplicated literary narratives and informational passages. They can use context clues to determine the appropriate meaning of multiple-meaning words in uncomplicated passages, and can order sequences of events in uncomplicated passages. They are expanding their use of reasoning skills: making generalizations about characters and situations from explicit language and summarizing basic events and ideas in more challenging passages.

Score Range 28-32 Students can read closely all but the most dense and complex passages. Among the skills these students exhibit are the ability to: infer the main idea of a passage or paragraph, use details from different sections of some complex informational passages to support a specific point or argument, and order sequences of events as they occur in more challenging literary and informational passages. They reveal an understanding of the dynamics of characters' relationships in more challenging literary narratives, and they are able to identify implied cause-effect relationships. These students can determine the appropriate meanings of words from richly figurative contexts. They demonstrate their ability to reason by: using information from different sections of more challenging passages to make generalizations about characters and situations, determining an author's tone or attitude toward his or her subject, and summarizing events and ideas in virtually any passage.

Score Range 33-36 Students can read closely and reason about even the most dense and complex passages. They can identify main ideas of passages and paragraphs, locate the important details and facts that support any idea or argument, and order sequences of events in complex passages. They make comparisons, conclusions, and generalizations that reveal a feeling for the subtleties in relationships between characters and ideas. They also have the ability to identify implied cause-effect relationships in complex passages, and can determine, even in situations where the language is quite figurative and the vocabulary is difficult, the meanings of context-dependent words or phrases in any passage. They read with critical understanding, evident in their ability to make complex generalizations about characters and situations by synthesizing information from different portions of the text. They are also able to identify and then generalize about an author's attitude or point of view toward his or her subject in virtually any passage. They can understand and generalize about portions of a complex literary narrative that use a range of literary devices.

Descriptions of ACT Assessment Reading Passages

Uncomplicated Literary Narratives refers to excerpts from essays, short stories, and novels that tend to use simple language and structure, have a clear purpose and a familiar style, present straightforward interactions between characters, and employ only a limited number of literary devices such as metaphor, simile, or hyperbole.

More Challenging Literary Narratives refers to excerpts from essays, short stories, and novels that tend to make moderate use of figurative language, have a more intricate structure and messages conveyed with some subtlety, and may feature somewhat complex interactions between characters.

Complex Literary Narratives refers to excerpts from essays, short stories, and novels that tend to make generous use of ambiguous language and literary devices, feature complex and subtle interactions between characters, often contain challenging context dependent vocabulary, and typically contain messages and/or meanings hat are not explicit but are embedded in the passage.

Uncomplicated Informational Passages refers to materials that tend to contain a limited amount of data, address basic concepts using familiar language and conventional organizational patterns, have a clear purpose, and use written to be accessible.

More Challenging Informational Passages refers to materials that tend to present concepts that are not always stated explicitly and that are accompanied or illustrated by more -- and more detailed--- supporting data, include some difficult context-dependent words and are written in a somewhat more demanding and less accessible style.

Complex Informational Passages refers to materials that tend to include a sizable amount of data, present difficult concepts that are embedded (not explicit) in the text, use demanding words and phrases whose meaning must be determined from context, and are likely to include intricate explanations of processes or events.

Science Reasoning

Score Range 1-15 Students who score between 1-15 are most likely beginning to develop the skills and knowledge assessed in the 16-19 score range. Scores in the 16-19 range represent a level of performance considered by most colleges to be a minimum to enter credit-bearing courses.

Score Range 16-19 Students can select a single data point from a table and identify the basic features of a table or graph (e.g., headings, units of measurement, axis labels). They can also understand basic scientific terminology and can find pertinent information in a brief body of text. When working with data, they can compare two data points within one variable. They can identify a direct relationship between two variables.

Score Range 20-23 Students can select data from simple graphs (e.g., line graphs, bar graphs) and diagrams (e.g., carbon cycle, electrical circuits). They are able to identify pertinent data from a table with two variables and can also identify whether a relationship exists between two variables. When working with data, they can identify an inverse relationship between two variables. They can translate both written data and tabular data into graphic form. They understand basic lab procedures and can identify the control in an experiment or study.

Score Range 24-27 Students can select pertinent data from a graph or table with three or more variables and can interpolate between data points in a graph or table. They can identify a simple mathematical relationship between data and can identify a direct or inverse relationship between three or more variables. They understand moderately complex lab procedures and can determine the purpose behind parts of a basic experimental design. They can select a simple hypothesis, statement, prediction, generalization, or conclusion that is supported by a data set. They can identify strengths and weaknesses or similarities and differences in one or more experiments or viewpoints. They can also identify key issues in an argument or viewpoint and determine whether new information supports or weakens a viewpoint or hypothesis.

Score Range 28-32 Students can identify a complex mathematical relationship between data and can extrapolate from data points in a graph or table. They are able to compare and combine written information from the text with additional information provided (e.g., data in tables or figures). They understand complex lab procedures, can determine the hypothesis for an experiment, and can determine the purpose behind parts of a moderately complicated experimental design. When analyzing an experiment, these students can identify an alternate method for testing a hypothesis. These students can select a complex hypothesis, statement, prediction, generalization, or conclusion based on one data set. They can also select a set of data that support or contradict a hypothesis, statement, prediction, generalization, or conclusion. They can also predict the most likely or least likely result based on a given viewpoint.

Score Range 33-36 Students can compare and combine data from two data sets. They are also able to combine new, complex information with given data or other information. They understand precision and accuracy issues. When analyzing an experiment, these students can predict how modifying an experiment or study (adding a new trial or changing a variable) will affect the results. They can also identify new information that could be collected from a new experiment or by modifying an existing experiment. They can select a complex hypothesis, statement, prediction, generalization, or conclusion based on two or more data sets. They are able to determine whether given data or other information supports or contradicts a hypothesis or conclusion.

Appendix C

Number of ACT-Tested Graduates by CGCS District-- 1998

Number of ACT-Tested Graduates by CGCS District

	School District	Number of ACT Test Takers		School District	Number of ACT Test Takers
1	Atlanta Public Schools	247	27	Milwaukee Public Schools	1,367
2	Baltimore City Public Schools	180	28	Minneapolis Public Schools	886
3	Birmingham Public Schools	957	29	Nashville-Davidson Metropolitan Public	2,257
4	Boston Public Schools	72	30	New Orleans Parish School Board	2,080
5	Broward County Public Schools	3,075	31	New York City Public Schools	1,202
6	Buffalo Public Schools	58	32	Newark Public Schools	6
7	Charlotte-Mecklenburg Public Schools	430	33	Norfolk Public Schools	48
8	Chicago Public Schools	8,796	34	Oakland Unified School District	310
9	Cleveland Public Schools	776	35	Oklahoma City Public Schools	540
10	Columbus Public Schools	1,067	36	Omaha Public Schools	1,310
11	Dallas Independent School District	3,870	37	Philadelphia Public Schools	319
12	Dayton City School District	647	38	Pittsburgh Public Schools	712
13	Denver Public Schools	325	39	Portland Public Schools	202
14	Des Moines Independent School District	1,128	40	Providence Public Schools	1
15	Detroit Public Schools	803	41	Richmond Public Schools	46
16	District of Columbia Public Schools	3,362	42	Rochester City School District	96
17	El Paso Independent School District	188	43	Sacramento Public Schools	280
18	Fort Worth Independent School District	604	44	Salt Lake City School District	734
19	Fresno Unified School District	368	45	San Antonio Independent School District	789
20	Houston Independent School District	410	46	San Diego Unified School District	620
21	Indianapolis Public Schools	915	47	San Francisco Unified School District	314
22	Jefferson County Public Schools	388	48	Seattle Public Schools	201
23	Long Beach Unified School District	3,231	49	St. Louis Public Schools	440
24	Los Angeles Unified School District	324	50	St. Paul Public Schools	899
25	Memphis City Public Schools	3,742	51	Toledo Public Schools	621
26	Miami-Dade County Public Schools	3,754	52	Tucson Unified School District	461
27	Milwaukee Public Schools	1,367			
				Total	56,458

The number of students taking the ACT Assessment varies widely from city to city. In some districts, the SAT is the college admissions examination taken by the major of graduating seniors. Districts with fewer than 100 students were not included in the comparisons.

About the Organizations

ACT, Inc. is an independent, not-for-profit organization dedicated to providing information to individuals of all ages to help them make successful educational and career transitions. The ACT Assessment Program is a college admissions, placement, and guidance program taken over 1.7 million times annually. It includes four tests: English, mathematics, reading, and science reasoning. ACT has a special interest in ensuring that test score data are accurately reported and used in a manner that is useful to school districts, and provides similar assessment data to states, districts, and schools that have students participating in the ACT Assessment Program.

The Council of the Great City Schools (CGCS) is the only independent organization in the nation whose sole purpose is improving urban public education. Composed of some 50 of the nation's largest city public school districts, the Council promotes urban education and is an advocate for urban students through legislation, research, and media relations. The organization also provides forums for school districts to share common problems and solutions, exchange information, and address new challenges.

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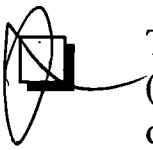

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